

at 4 p. m., extended to Lake Ontario. The center of the disturbance moved slowly northeastward, but by the morning of the 22d the storm had almost lost its identity and appeared to be dissipating over northern Michigan. Verifying velocities were attained over extreme southern Lakes Michigan and Huron and over portions of Lakes Erie and Ontario. The remainder of the month was without any storm activity that required the issuance of warnings.—*C. A. Donnel.*

#### NEW ORLEANS FORECAST DISTRICT.

Small-craft warnings were displayed on the Texas and Louisiana coasts on the 12th for a disturbance of moderate intensity, which moved northeastward from the lower Rio Grande Valley and was attended by shifting winds which reached moderate gale force at times.

On the 19th a V-shaped trough of low pressure extended into west Texas and northern Mexico and was advancing eastward. Southeast storm warnings were ordered displayed on the Texas coast at 8:40 p. m. Winds of verifying velocity occurred during the night. Small-craft warnings were displayed on the Louisiana coast on the 20th and were justified.

Small-craft warnings, displayed on the Texas coast on the 23d, were justified.

On the 30th, with conditions generally similar to those of the 19th but with smaller barometric gradient, southeast storm warnings were ordered displayed on the Texas coast at 8:40 p. m. A 40-mile wind from the southeast was reported the next morning from Galveston, Tex.

Frost forecasts for the northern portion of the district, or some part thereof, were issued on the 5th, 7th, and 8th and were justified. Forecasts of frost, issued on the 14th, 15th, and 24th, were not so successful, the temperatures not being quite low enough for frost.—*R. A. Dyke.*

#### DENVER FORECAST DISTRICT.

Low-pressure areas occupied some portion of the Denver Forecast District on 26 days during April. Four anticyclonic areas appeared on the northeastern slope of the Rocky Mountains during the month, and one of these, during the latter part of the month, persisted for nearly a week.

A moderate cold-wave warning was issued for extreme northeastern Colorado on the evening of the 5th, an anticyclonic area having appeared on the northeastern slope, with a sharp rise in pressure in western Montana and over the Dakotas. The temperature fell 28° at North Platte on the evening of the 6th and temperatures as low as 26° occurred along the eastern border of Colorado the following morning. On the morning of the 7th low-pressure areas of marked intensity were central in Iowa and southwestern Colorado, with moderately high barometric readings in Montana accompanied by temperatures ranging from 6° to 20° above zero. A cold wave occurred at Modena, without warnings, following the passage of a secondary depression over that locality. Freezing-temperature warnings were issued for Utah, Colorado, northern Arizona and northern New Mexico, with a moderate cold wave in central Colorado and possibly frost in southern Arizona. Freezing temperatures occurred throughout the area for which these warnings were issued, but the cold-wave warning for central Colorado was not verified as the HIGH moved southeastward to Kansas and the temperature fall in southern Arizona was not sufficient

for the formation of frost. Low pressure prevailed on the southeastern slope on the morning of the 13th, with an extensive high-pressure area over the North Pacific states. Warnings of freezing temperature were issued for northeastern Arizona and frost or freezing temperatures for Colorado, Utah, and northern New Mexico. Frost or freezing temperatures occurred in the greater part of the area. The HIGH occupied the northern Rocky Mountain region and the eastern slope on the 14th and warnings of frost in northern and eastern New Mexico and local frost in Colorado were issued. Frost was reported in the greater part of the area, with frost temperatures as far south as the Mexican border. As the HIGH still occupied the Rocky Mountain region on the 15th local frost warnings were repeated for Colorado and northern New Mexico. Frosts were again reported in Colorado, but the development of a low in the Southwest was attended by cloudiness in New Mexico.

On the morning of the 20th low-pressure areas of marked intensity occupied Manitoba and the Texas Panhandle, with relatively high pressure in the middle Plateau region. Warnings of freezing temperature were issued for Colorado and New Mexico. Freezing temperature occurred in eastern Colorado and frost temperatures in parts of New Mexico. At 8 a. m. on the 22d a low of marked intensity was central in northeastern Arizona, with an anticyclonic area on the northeastern slope. Live-stock warnings were issued for Utah and northern and western Colorado, freezing-temperature warnings for northern New Mexico and northeastern Arizona and possibly frost in southern Arizona. Freezing temperatures occurred accompanied by heavy precipitation in parts of Colorado. Frost was reported at Phoenix, a temperature of 46° at Yuma and a killing frost at Santa Fe. Freezing-temperature and frost warnings were issued on the morning of the 23d for Colorado, New Mexico, Utah, and northern Arizona and frost in southern Arizona as the pressure was increasing throughout the district. Freezing temperature or frost prevailed, except in New Mexico, where cloudiness developed with rising temperature owing to relatively low pressure in southern Arizona. Frost or freezing-temperature warnings were repeated on the morning of the 24th for Colorado, Utah, and eastern New Mexico. Owing to the development of the southwestern low the temperature rose and freezing weather was reported only in localities in Utah and Colorado. On the morning of the 30th an area of low pressure of marked intensity, that had its inception in the Plateau region, was central in Colorado, followed by rising pressure in the Plateau region. Warnings of freezing temperature or frost were issued for eastern and southern Utah, freezing temperature in western Colorado, northern New Mexico, and northeastern Arizona, and possibly frost in southern Arizona. The warnings were justified, except in southern Arizona, where the fall in temperature was small owing to a slight barometric depression in southwestern Arizona.—*Frederick W. Brist.*

#### SAN FRANCISCO FORECAST DISTRICT.

Following a protracted dry spell in March, the month of April was ushered in with good rains that lasted intermittently till the 10th. Another rainy spell began on the 17th and continued until the 21st, after which fair weather generally prevailed. The low-pressure areas causing the early rains came from the ocean;